



Center on the Developing Child
HARVARD UNIVERSITY

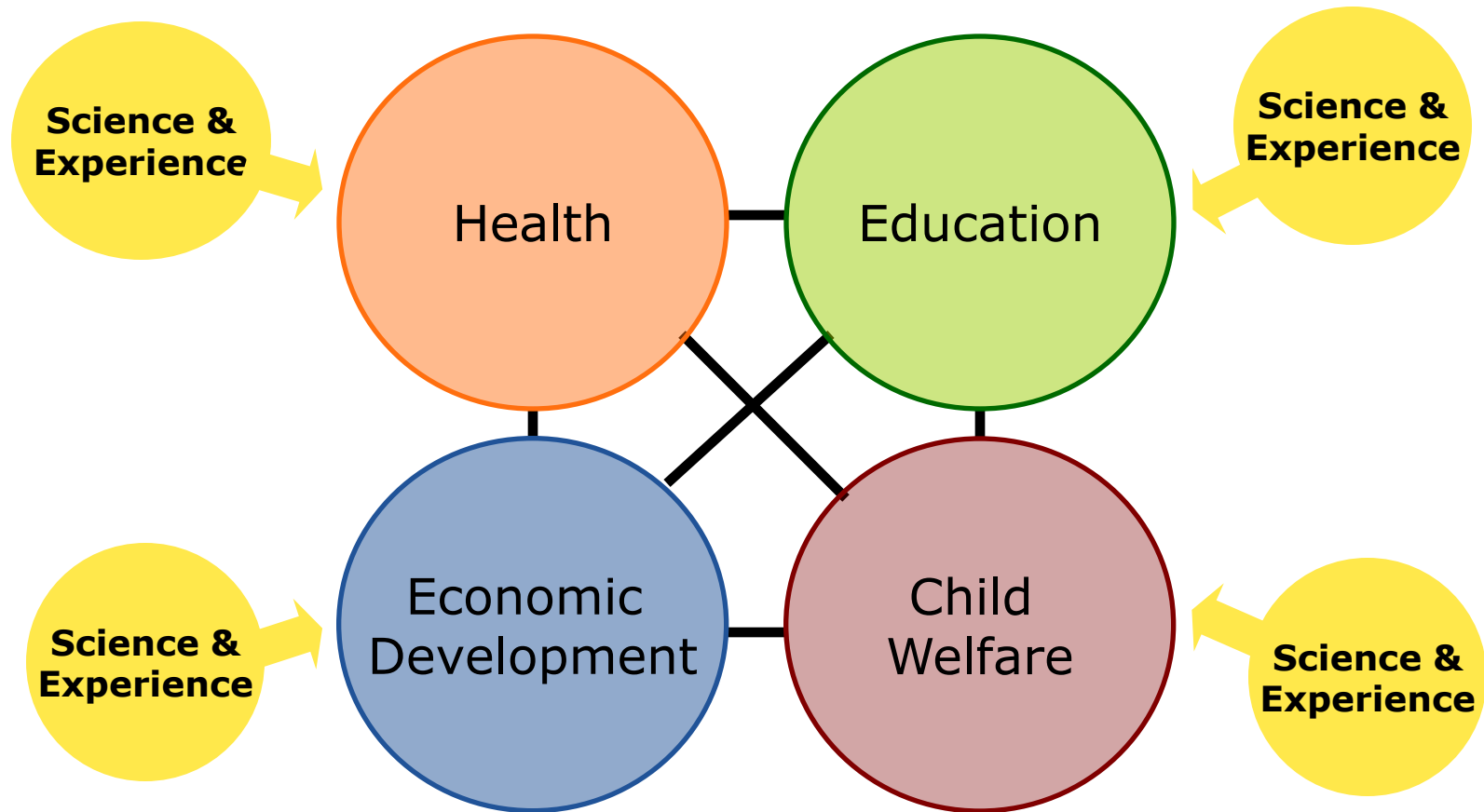
Leveraging Advances in Science to Strengthen the Foundations of Lifelong Learning, Behavior, and Health

JACK P. SHONKOFF, M.D.

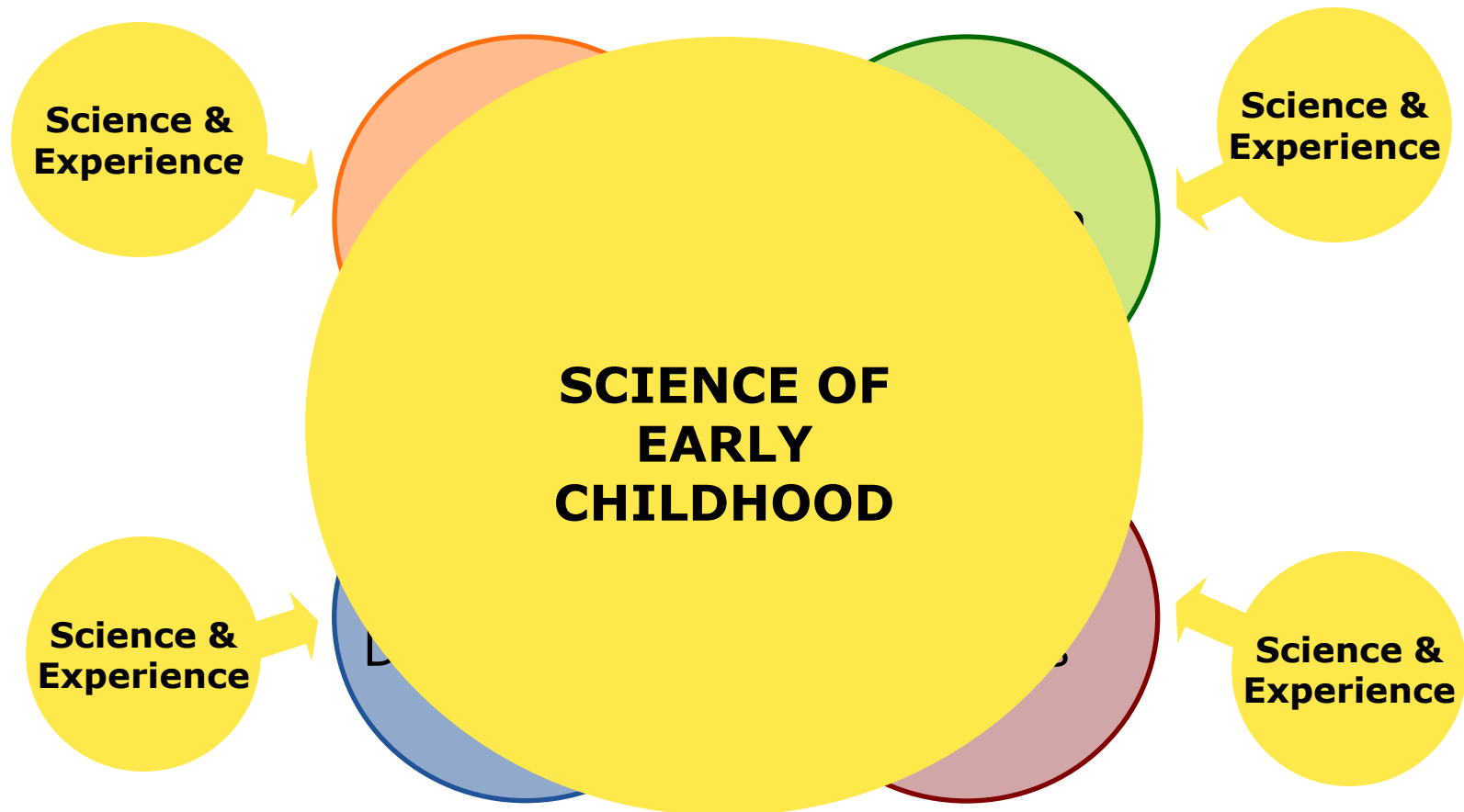
Julius B. Richmond FAMRI Professor of Child Health and Development
Professor of Pediatrics and Director, Center on the Developing Child
Harvard University

Start Small, Think Big | Senators' Breakfast on Early Childhood
Lincoln, Nebraska | January 14, 2013

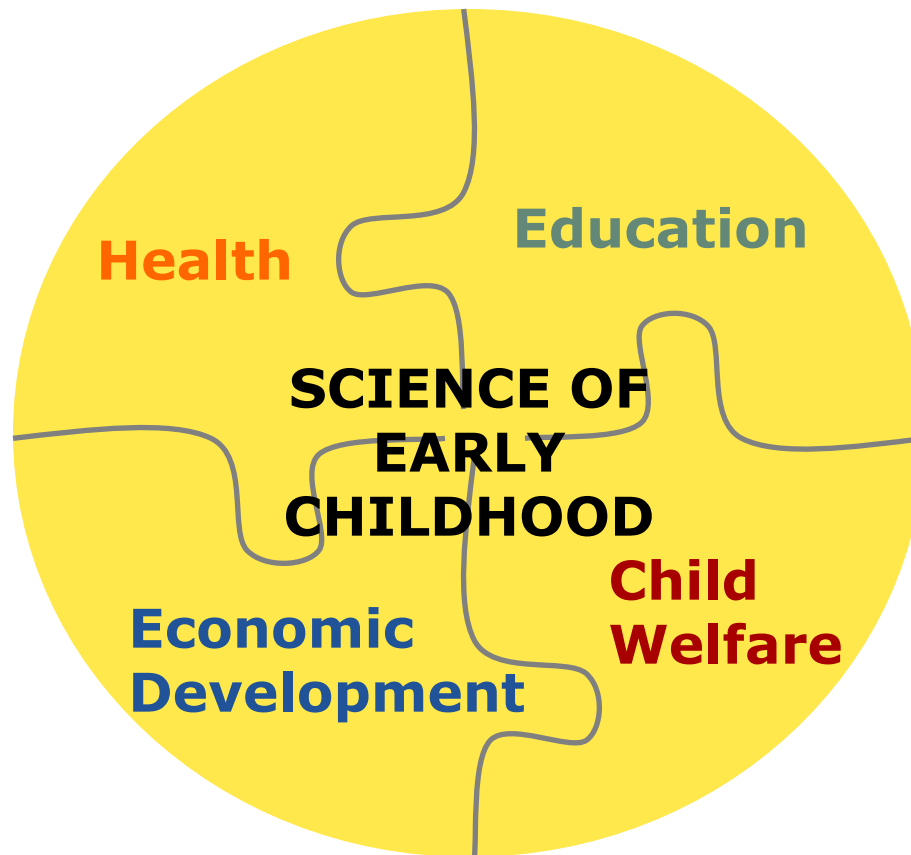
Current Policies and Practices Are Guided by Different Sources of Knowledge in Loosely Connected Domains



Converging Principles in the Developmental Sciences Could Drive More Productive Investments Across Sectors



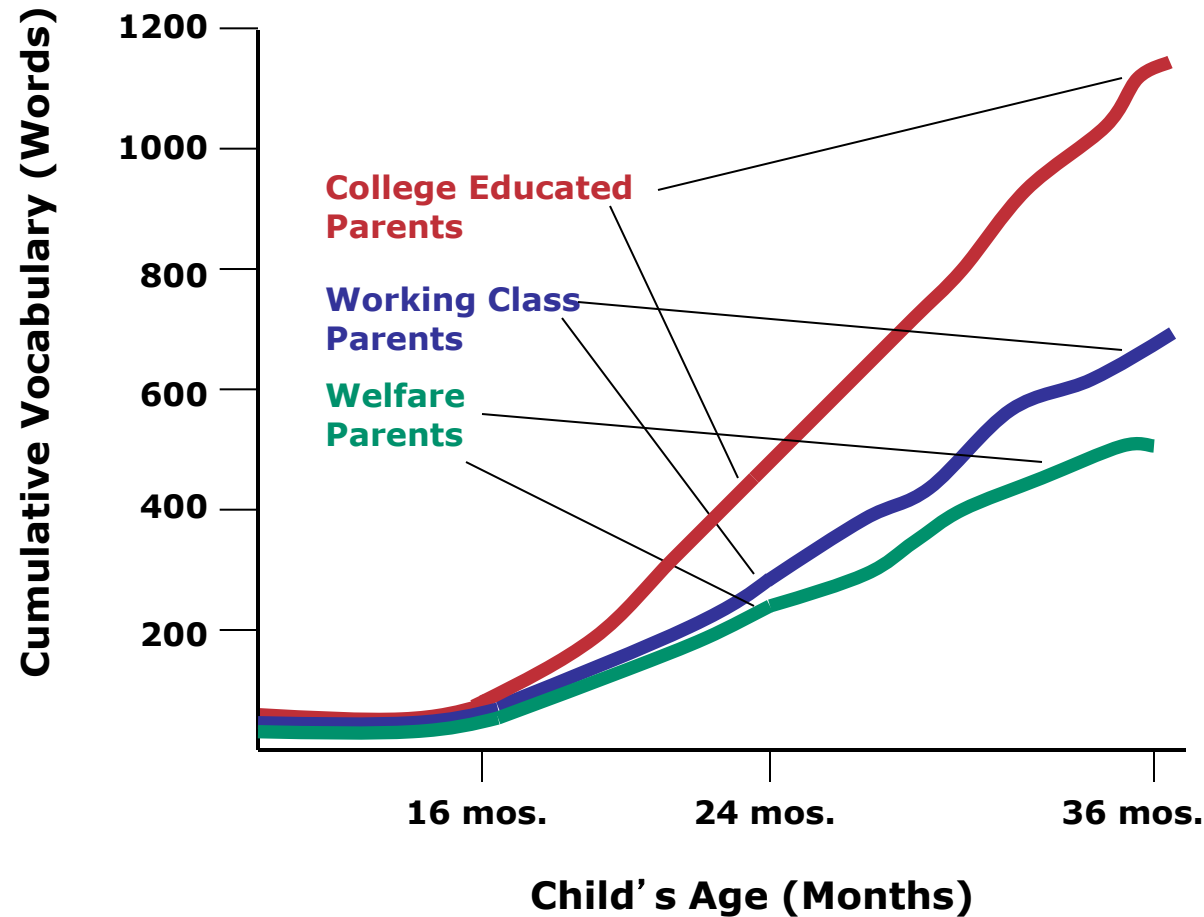
Converging Principles in the Developmental Sciences Could Drive More Productive Investments Across Sectors



Experiences Build Brain Architecture

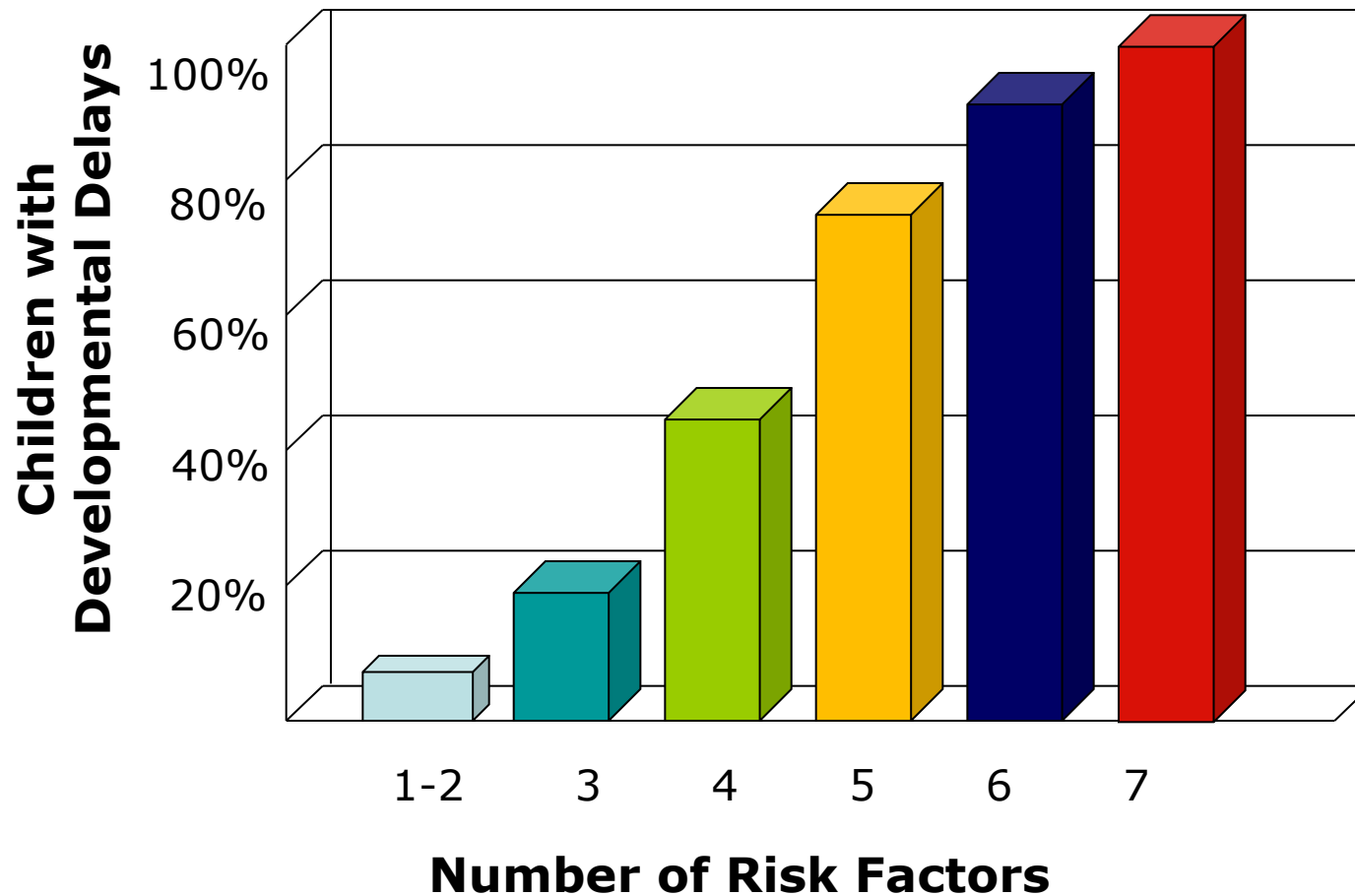


Barriers to Educational Achievement Emerge at a Very Young Age



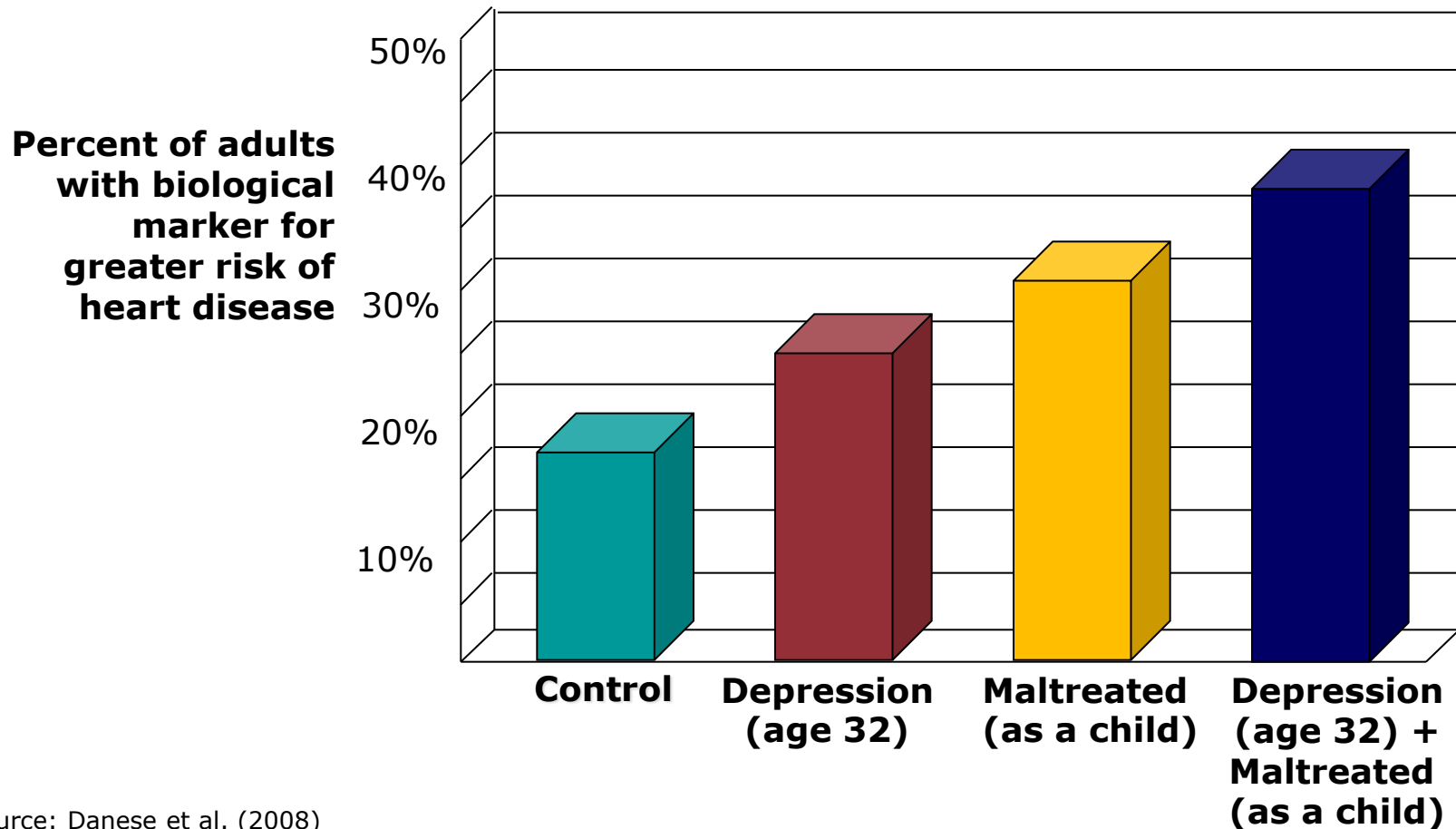
Source: Hart & Risley (1995)

Significant Adversity Impairs Development in the First Three Years



Source: Barth, et al. (2008)

Biological “Memories” Link Maltreatment in Childhood to Greater Risk of Adult Heart Disease



Source: Danese et al. (2008)

Toxic Stress Derails Healthy Development

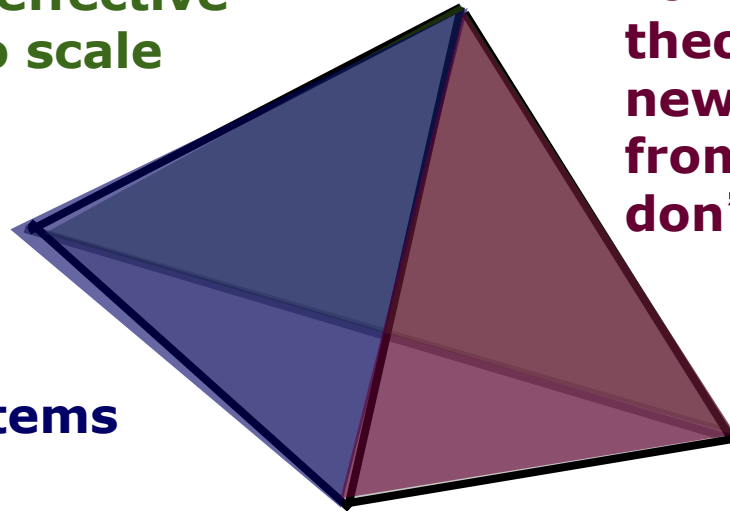


Increasing the Impact of Current Investments Requires Three Strategies

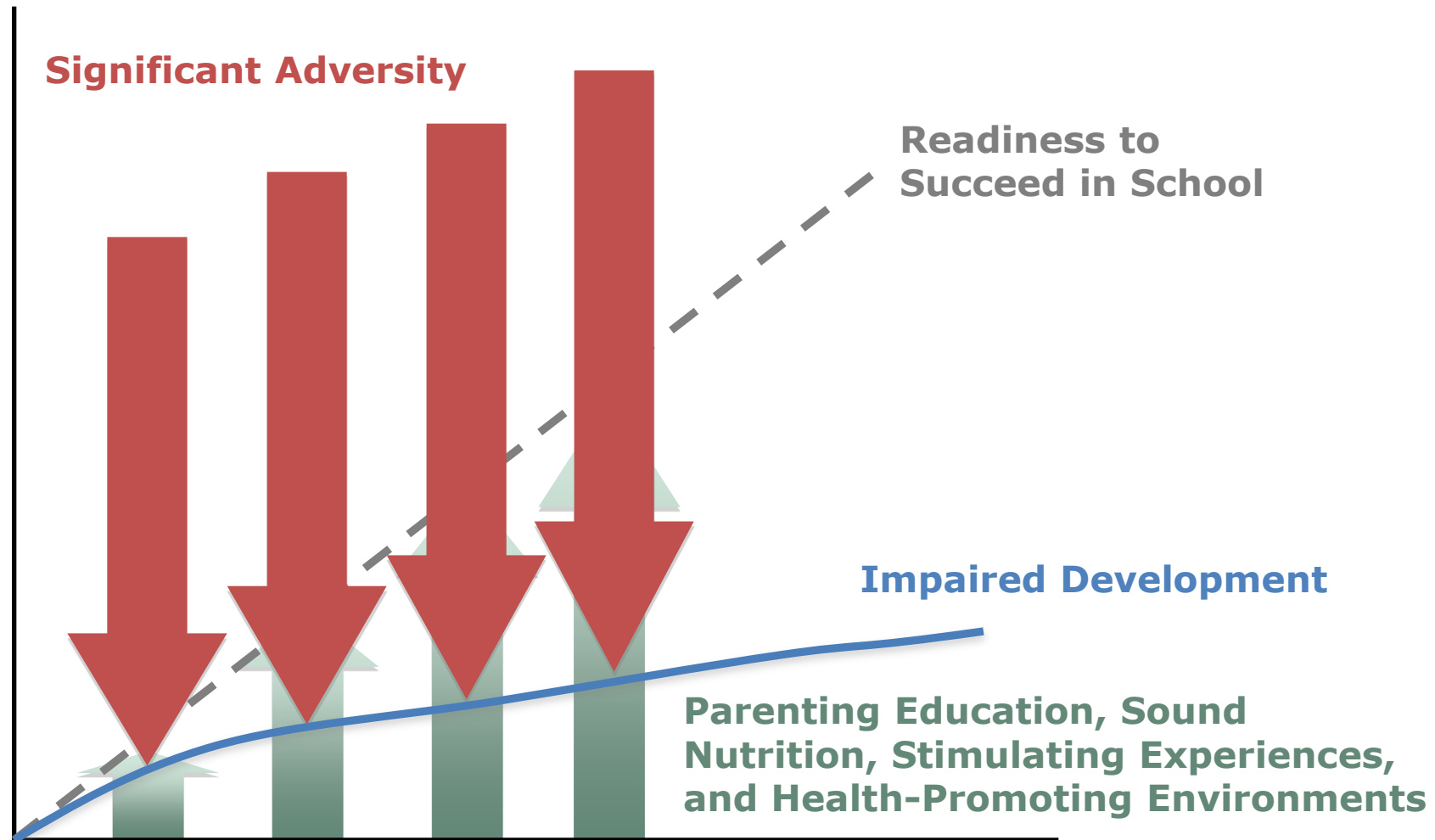
**Enhance quality
and take effective
models to scale**

**Formulate enhanced
theories of change, test
new ideas, and learn
from interventions that
don't work**

**Build strong systems
for coordinated
service delivery and
data management**



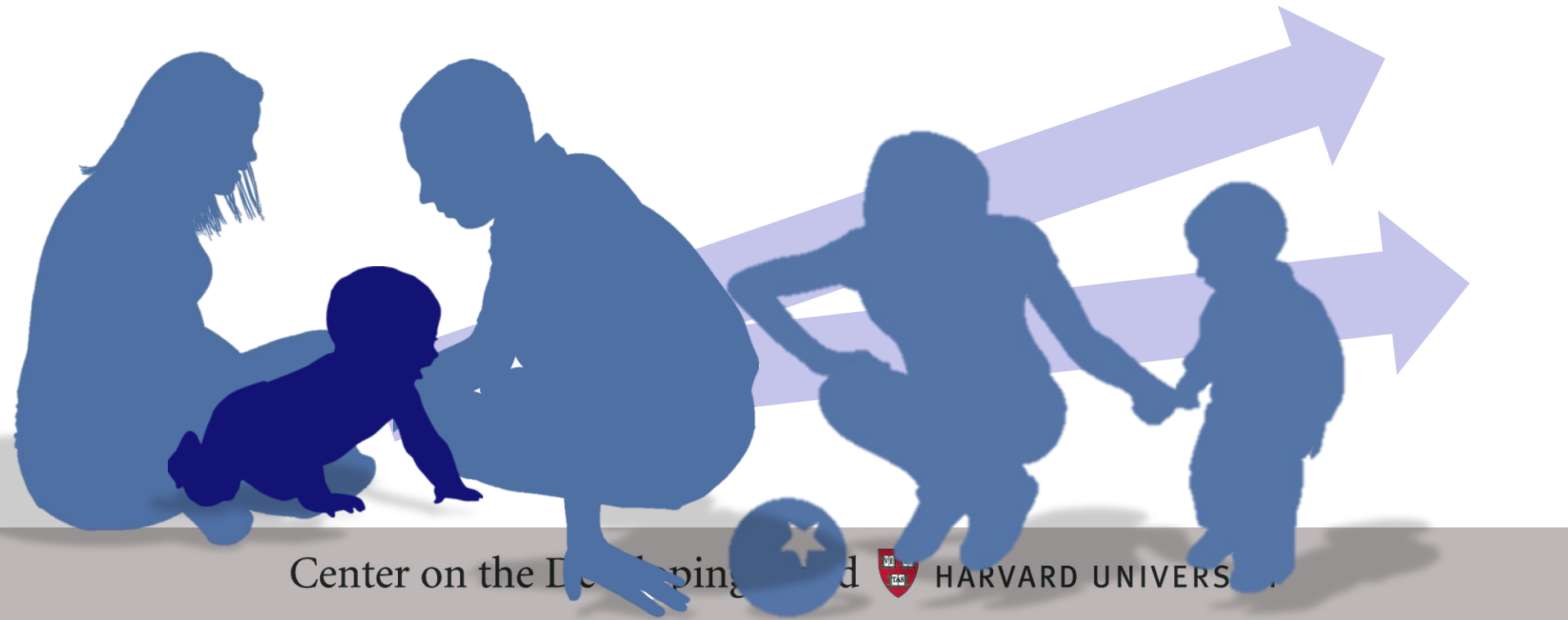
Current Conceptual Framework Guiding Early Childhood Policy and Practice



Creating a New Paradigm for Early Childhood Policy and Practice

Early experiences affect lifelong health **and** learning

Healthy development requires protection **and** enrichment



Generating Hypotheses to Guide New Intervention Strategies

Early experiences affect lifelong health *and* learning

Healthy development requires protection *and* enrichment



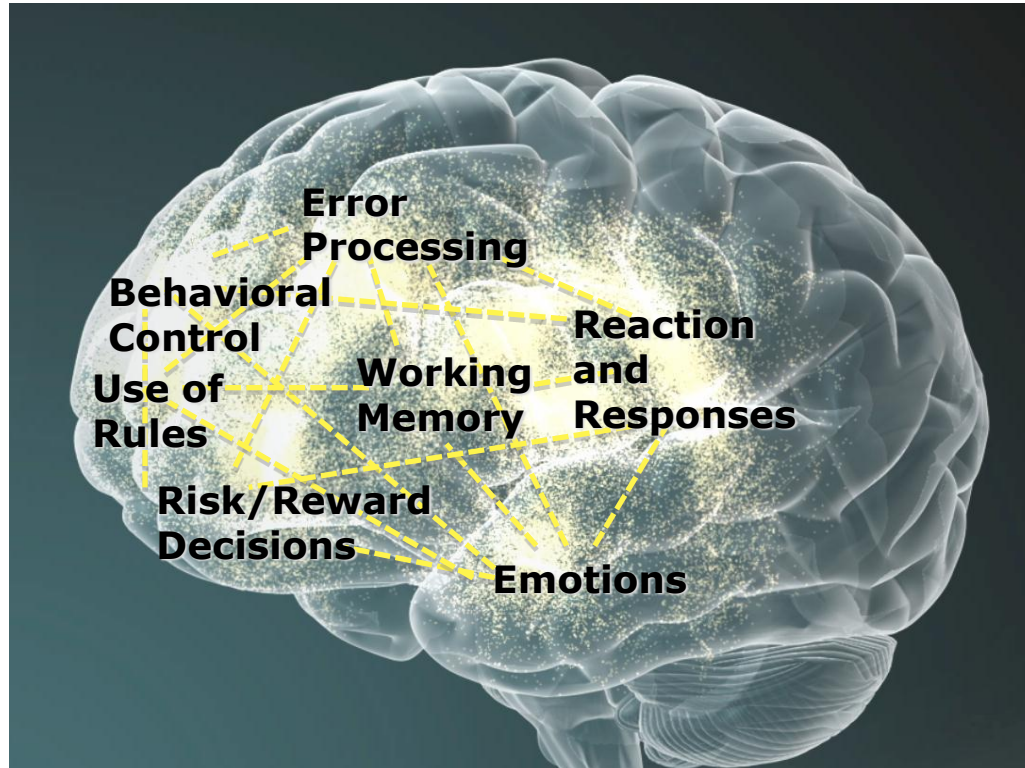
① Protection and enrichment for young children require capacity-building for adults

② Improved parenting skills also enhance employability and economic stability

③ Strong communities reduce the burdens of adversity

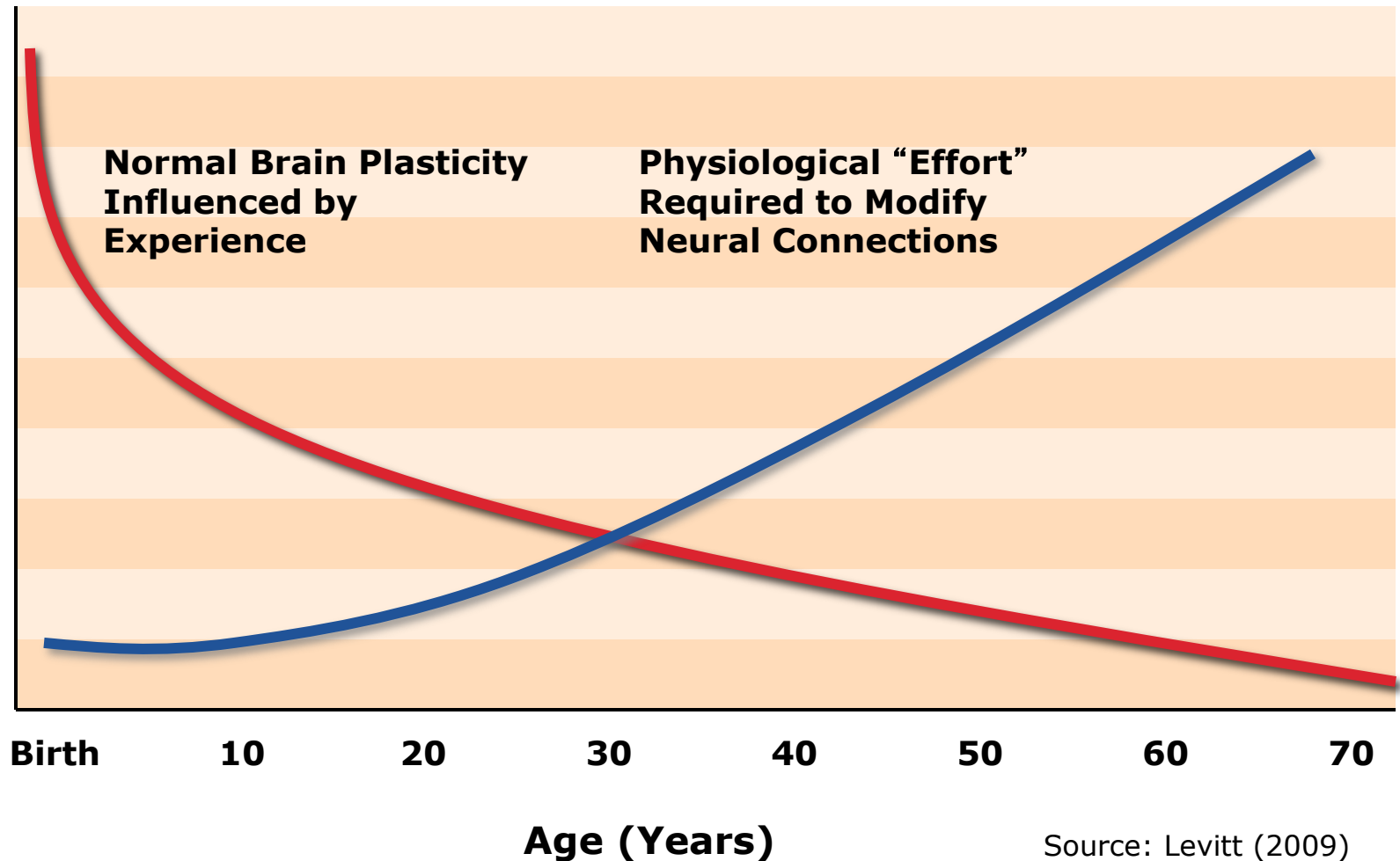


Skill Building for Parenting and Economic Self-Sufficiency Points to the Foundational Role of Executive Function and Self-Regulation Skills

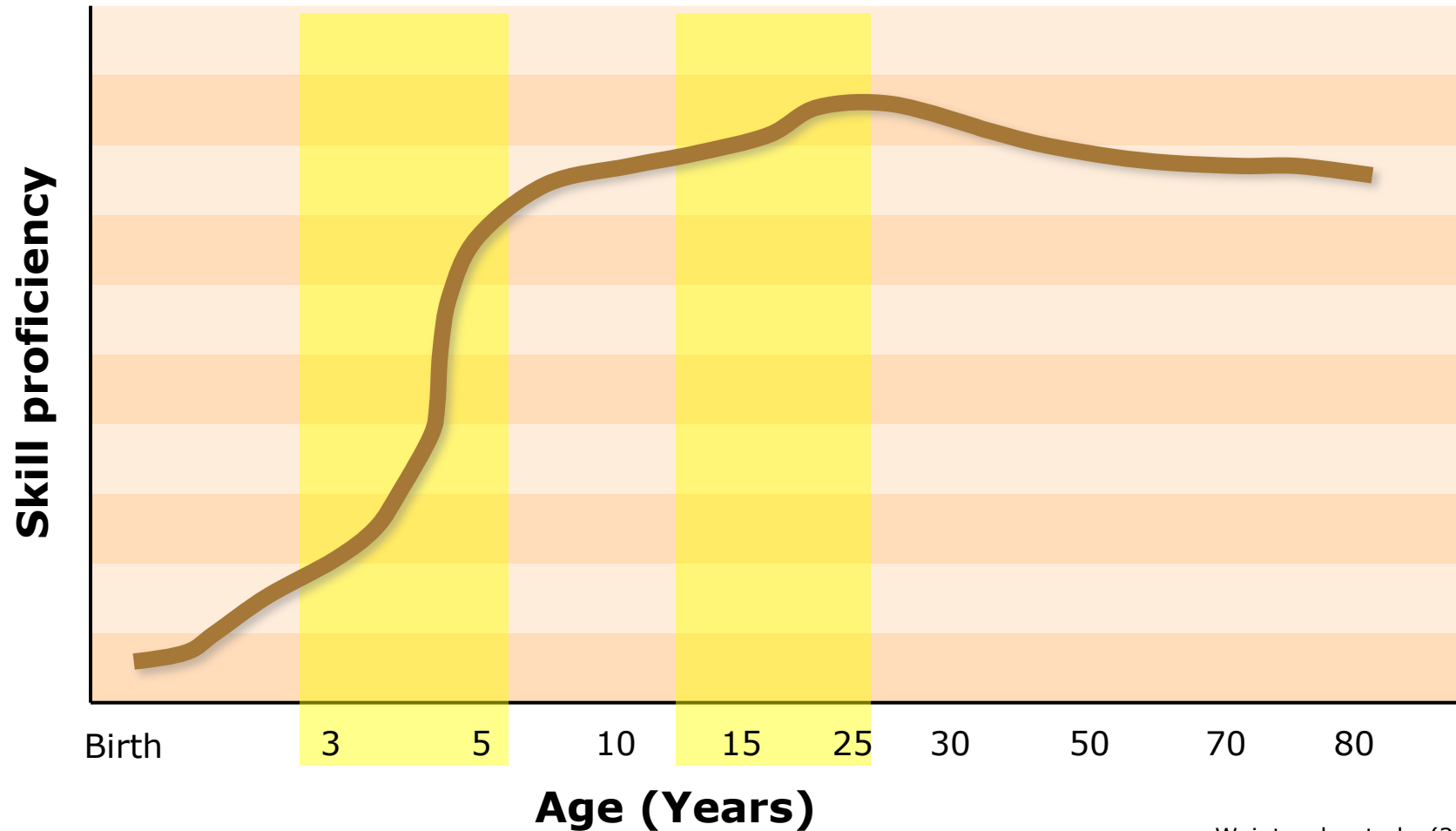


These core dimensions of adult competence include the ability to focus and sustain attention, set goals and make plans, follow rules, solve problems, monitor actions, defer gratification, and control impulses.

The Challenge: The Ability to Change Brains and Behavior Decreases Over Time



The Opportunity: Circuits for Executive Function Skills Are Located in Brain Regions that Exhibit an Extended Period of Plasticity



Weintraub, et al., (2011)

The Time Has Come to Create a New Era in Early Childhood Policy and Practice

Practitioners and community leaders are hungry for new ideas to address problems in areas where intervention effects are variable.

Policymakers and civic leaders are looking for fresh thinking about how to increase the returns on investment in education, health care, and human services.

Advances in science and productive town-gown partnerships could build on current best practices and catalyze new strategies to equalize opportunities, increase social mobility, and improve life outcomes.



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Being informed centers the arrivals and departures of dozens of planes on traffic control mechanism is called executive function focus on multiple streams of information at the same time. This edition of the *InBrief* series explains what can disrupt their development, and how support them.
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InBrief: The Impact of Early Adversity on Children's Development

Toxic Stress Changes Brain Architecture

Normal
Typical neuron with many connections
Toxic Stress
Neuron damaged by toxic stress - fewer connections

This brief outlines basic concepts from the research on the biology of stress which show that major adversity can weaken developing brain architecture and permanently set the body's stress response system on high alert. Science also shows that providing stable, responsive environments for children in the earliest years of life can prevent or reverse these conditions, with lifelong consequences for learning, behavior, and health.
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The Foundations of Lifelong Health Are Built in Early Childhood

A ground-breaking framework for using evidence to improve outcomes in learning, behavior, and health for vulnerable children, co-authored by the members of the *National Forum on Early Childhood Policy and Programs* and the *National Scientific Council on the Developing Child*. Combining knowledge from neuroscience, behavioral and developmental science, economics, and 40 years of early childhood program evaluation, the authors provide an informed, nonpartisan, pragmatic framework to guide policymakers toward science-based policies that improve the lives of young children and benefit society as a whole.

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